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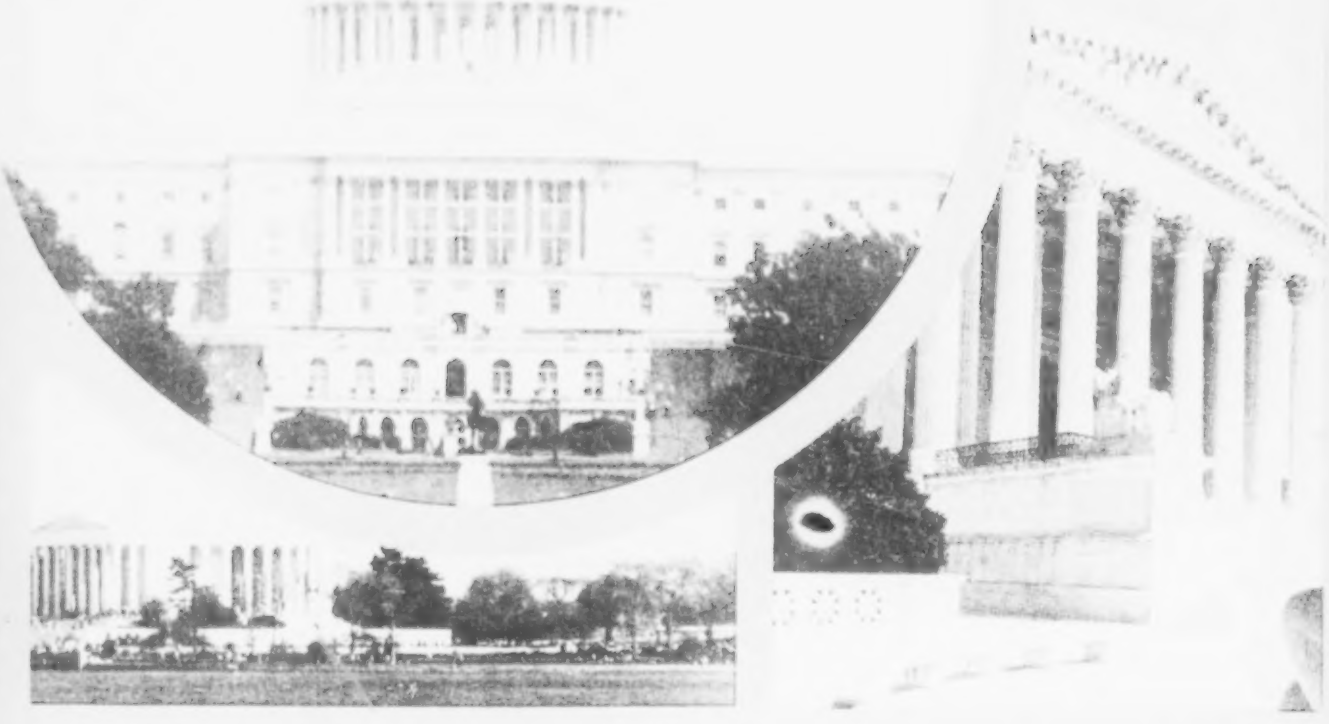

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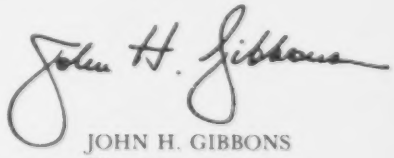
Preface

The Office of Technology Assessment (OTA) was established by Congress to provide congressional committees with analyses of emerging, difficult, and often highly technical issues. Governed by a 12-member bipartisan congressional board—six Senators and six Representatives—OTA provides a variety of services to the Senate and House on a broad range of issues. Services include briefings, testimony, and special reports on major assessments—some requiring more than 2 years to complete. OTA explores complex issues involving science and technology, helping Congress to resolve uncertainties and conflicting claims, identifying alternative policy options, and providing foresight or early alert to new developments that could have important implications for future Federal policy. OTA does not advocate particular policies or actions, but points out their pros and cons and sorts out the facts.

OTA's multidisciplinary staff plans, directs, and drafts all assessments. It draws extensively on the broad technical and professional resources of the private sector, including the academic community, public interest groups, State and local government, and the citizenry at large.

The publications listed in this brochure are the result of various assessments and analyses requested by the committees of Congress. This listing, organized by OTA Program area, will be revised periodically as further reports are published by OTA.



JOHN H. GIBBONS
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Categories of Reports Issued by OTA

OTA Reports are the principal documentation of formal assessment projects. These projects are approved in advance by the Technology Assessment Board. **Special Reports** are relatively short OTA reports on topics of direct relevance to specific legislation, oversight, or other congressional action. Both types of documents are expected to present policy options and findings with considerable policy significance. The Technology Assessment Board has the opportunity to review Reports and Special Reports before release but this does not necessarily imply endorsement of the results by the Board or its individual members.

OTA Technical Memoranda are issued at the request of committees or Members of Congress on specific technical subjects that are relevant to current congressional legislation or oversight.

OTA Background Papers, Case Studies, Workshop Proceedings, and Staff Papers are documents that contain information that supplements formal OTA assessments or is an outcome of internal exploratory planning and evaluation. The material is usually not of immediate policy interest such as is contained in an OTA Report, Special Report, or Technical Memorandum, nor does it present options for Congress to consider.

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If you encounter difficulty and need assistance in the purchase or receipt of publications listed in this document from either GPO or NTIS, please notify the OTA Publishing Office at the above address or telephone number.

Energy & Materials

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Starpower: The U.S. and the International Quest for Fusion Energy. Examines how the fusion program serves at satisfying a number of different national goals—long-term energy supply, stimulation of technology, international scientific prestige, and how the fusion program could be structured, including the role of international cooperation, once the program's goals and priorities have been decided. E-338, 10/87; 250 p.

GPO stock #052-003-01079-8 **$10.00**
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High-Technology Ceramics and Polymer Composites. Examines opportunities for high-technology ceramics and polymer composites over the next 15 to 25 years; determines the principal technical and related problems that need to be overcome if timely expansion of the commercial use of these materials takes place; and analyzes the broad implications of these high-technology materials to future U.S. economic growth and competitiveness. E-351. In progress.

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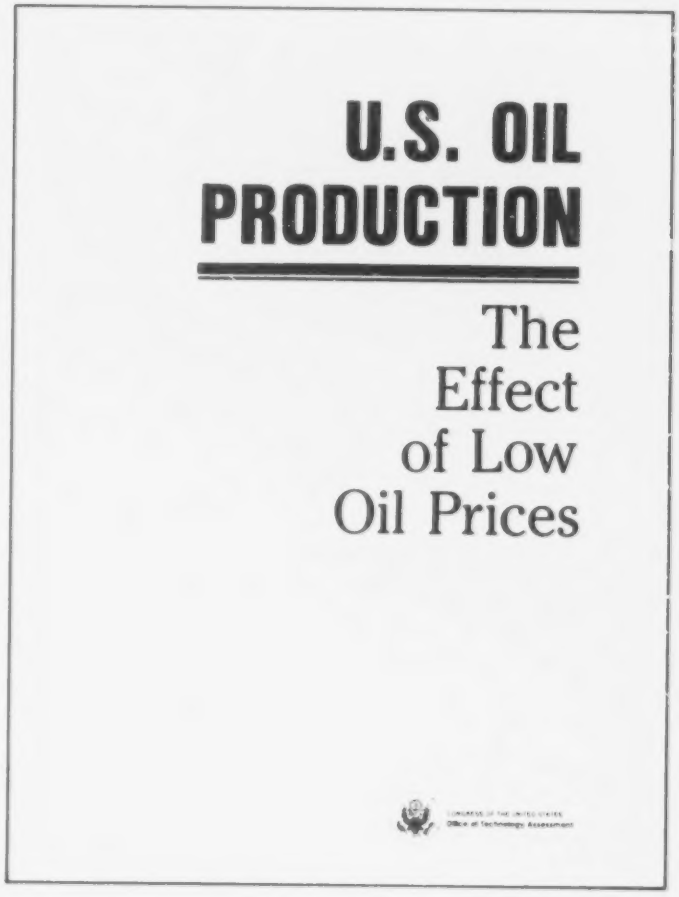

New Structural Materials Technologies: Opportunities for the Use of Advanced Ceramics and Composites—A Technical Memorandum. Analyzes and examines the military and commercial opportunities presented by new structural materials (i.e., ceramics, polymers, metals, or composites) and outlines the Federal research and development associated with such products. TM-E-32, 9/86; 52 p.

NTIS order #PB 87-118 253/AS

U.S. Oil Production: The Effect of Low Oil Prices—Special Report. Examines issues that influence the future direction of U.S. oil production. These issues include: the expected profitability of new investments in drilling; the potential of new oil exploration, development, and production technologies; the nature of the remaining oil resource base; and structural changes in the oil industry. E-348, 9/87; 144 p.

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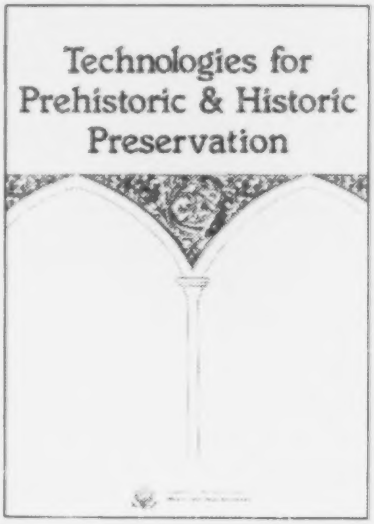

Technologies for Prehistoric and Historic Preservation. Focuses on technologies for locating, identifying, surveying, and evaluating historic structures and sites for their contents, including archaeological sites; preserving buildings, structures, and landscapes; and measuring the effect of changes in the environment on historic structures, artifacts, paintings, books, and other artifacts. E-319, 9/86; 212 p.

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Technologies for Preservation of Prehistoric and Historic Landscapes—Background Paper. Identifies and examines the principal technological issues related to the identification and preservation of prehistoric and historic landscapes. BP-E-44, 7/87; 60 p.

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Technologies for Underwater Archaeology and Maritime Preservation—Background Paper. Examines issues concerning the preservation of submerged and maritime historical resources. BP-E-37, 10/87; 64 p.

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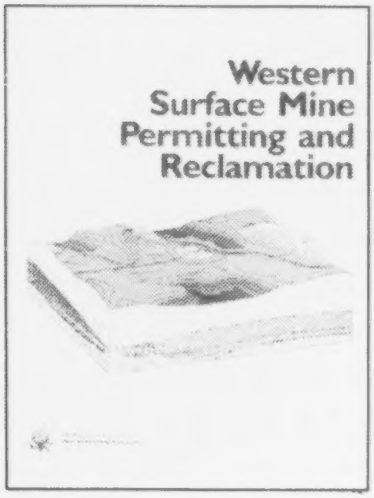

Western Surface Mine Permitting and Reclamation. Examines the methods of predicting and evaluating the success of reclamation practices; the relationship between preleasing and post-leasing technological or methodological requirements for environmental protection; the development and use of innovative and emerging reclamation techniques; and the status of monitoring and research on mined land reclamation in the West. E-279, 6/86; 306 p.

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Potential Effects of Section 3 of the Federal Coal Leasing Amendments Act of 1976—Special Report. Assesses the potential impacts of enforcement of section 3 and the possible consequences of amendment or repeal. Also examines the availability and effectiveness and other mechanisms for promoting timely development of Federal coal leases and analyzes a range of possible legislative alternatives for congressional consideration. E-300, 3/86; 186 p.

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New Electric Power Technologies: Problems and Prospects for the 1990s. Examines the development of a series of new technologies encouraged by the Federal Government that offer greater flexibility to utilities. Technologies to be examined include: utility-controlled load management; fuel cells; advanced coal- and gas-combustion; photovoltaics; and solar thermal, wind, and geothermal power. E-246, 7/85; 340 p.

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U.S. Natural Gas Availability: Gas Supply Through the Year 2000. Analyzes the key technical and physical parameters that determine the resource base, production rates, and costs of all categories of below-ground natural gas; critically reviews current estimates of the resource base, estimates the potential production rates of natural gas, and the uncertainties in these estimates; and assesses future technology trends and R&D needs that may accelerate these trends. E-245, 2/85; 260 p.

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U.S. Natural Gas Availability: Conventional Gas Supply Through the Year 2000—A Technical Memorandum. Evaluates the future prospects for the discovery and production of conventional natural gas in the Lower 48 States and examines the gas resource base and future production potential. TM-E-12, 9/83; 108 p.

NTIS order #PB 84-114 909/AS

U.S. Vulnerability to an Oil Import Curtailment: The Oil Replacement Capability. Provides an analysis of the technical potential for replacing large quantities of oil in the United States over a 5-year period by fuel substitution and conservation in the event of an extended oil supply shortfall and price rise; analyzes the macro-economic consequences of the shortfall and various rates of oil replacement by the technologies. E-243, 9/84; 160 p.

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Nuclear Power in an Age of Uncertainty. Examines the future of nuclear power in this country; describes the current technological, economic, financial, public perception, and regulatory problems facing the domestic nuclear industry; identifies how various changes might affect the industry's future. E-216, 2/84; 296 p.

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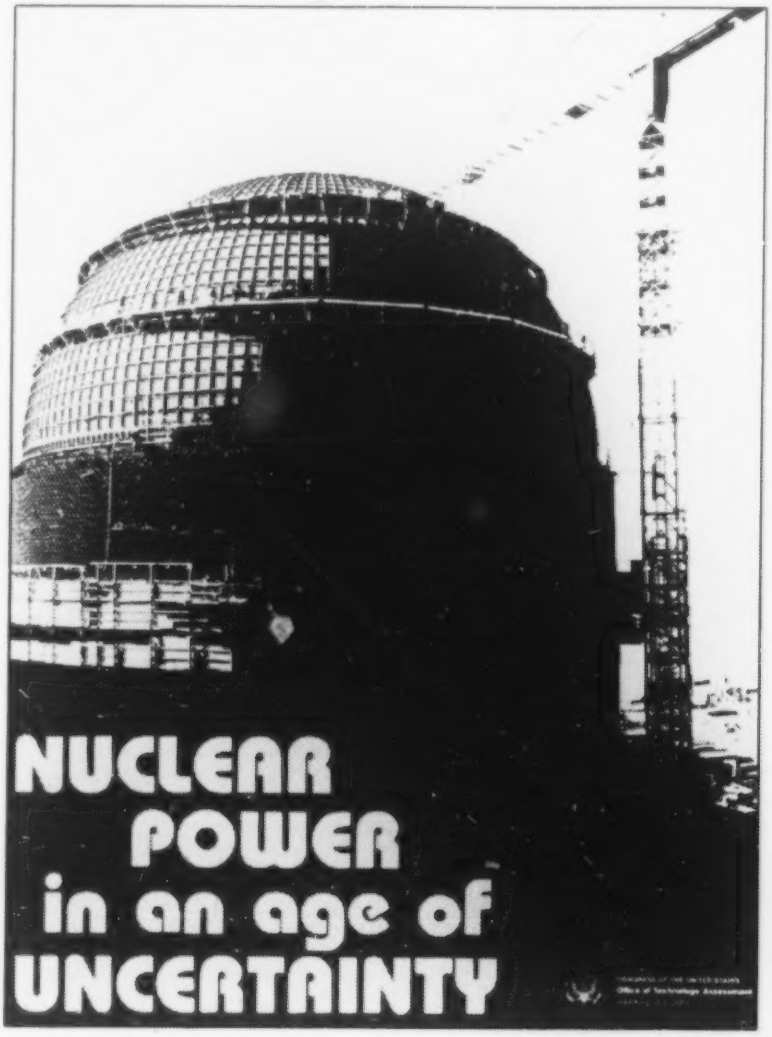

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Industrial Energy Use. Examines energy use in the industrial sector in general and in the largest energy-using industries—pulp and paper, petroleum refining, chemicals, and steel. E-198, 6/83; 176 p.

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Residential Energy Conservation Vol. II (E-87)	PB 80-162 829
The Direct Use of Coal: Prospects and Problems of Production and Combustion (E-86)▲ 3 ‡	PB 295 797
Application of Solar Technology to Today's Energy Needs Vol. I (E-66)	PB 283 770
Application of Solar Technology to Today's Energy Needs Vol. II (E-77)	PB 289 762
A Technology Assessment of Coal Slurry Pipelines (E-60)	PB 278 675
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Industry, Technology, & Employment

Hazardous Waste

Serious Reduction of Hazardous Waste. Examines and reviews the technical options to substantially reduce the amount and hazardous nature of industrial hazardous waste; identifies and analyzes current efforts in waste reduction and examines the full range of technical, economic, and institutional impediments facing industry in these efforts; analyzes Federal and State policies and programs which affect waste and nonregulatory options. ITE-317, 9/86; 264 p.

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From Pollution to Prevention: A Progress Report on Waste Reduction—Special Report. Examines options for reducing the generation of all hazardous wastes and environmental pollutants; the effectiveness of Federal actions taken so far; and summarizes what industry and State and local governments have done to implement waste reduction. ITE-347, 6/87; 64 p.

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Superfund Strategy. Examines future Superfund needs and how permanent cleanups can be accomplished in a cost-effective manner for diverse types of sites; describes the interactions among many components of the complex Superfund system; and analyzes the consequences of pursuing different strategies for implementing the program. ITE-252, 4/85; 292 p.

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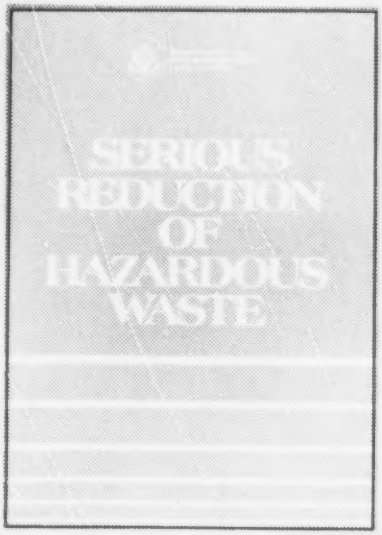

Technologies and Management Strategies for Hazardous Waste Control. Assesses the criteria for defining hazardous waste and for judging the relative health and environmental hazards of a given waste; evaluates technologies for cleaning up current waste disposal sites that are hazardous to health and the environment; assesses technologies and approaches for the safe treatment, storage, or disposal of hazardous waste; and examines technologies and approaches for reducing the volume of hazardous waste. M-196, 3/83; 408 p.

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Habitability of the Love Canal Area: An Analysis of the Technical Basis for the Decision on the Habitability of the Emergency Declaration Area—A Technical Memorandum. Based on a report published by the U.S. Environmental Protection Agency which was reviewed by a multidisciplinary team of consultants for several Federal agencies, the U.S. Department of Health and Human Services judged the Love Canal, N.Y., to be as habitable as the control areas with which it was compared. OTA critically reviewed EPA's habitability decision. TM-M-13, 6/83; 60 p.

NTIS order #PB 84-114 917

Nonnuclear Industrial Wastes: Classifying for Hazards Management—A Technical Memorandum. Addresses basic issues surrounding a degree-of-hazard classification approach; the potential for incorporating a degree-of-hazard concept through classification in the Resource Conservation and Recovery Act regulations; and examines various methods of applying a degree-of-hazard classification system. TM-M-9, 11/81; 36 p.

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International Competition in Services: Banking, Building, Software, Know How . . . Examines services trade in the world economy, linkages between the services and manufacturing, U.S. employment in the service industries, and U.S. and foreign government policies toward services and the new round of multilateral trade negotiations. Contains a detailed analysis of several service industries based on business strategies as affected by technological developments, industrial structure, and government policies. ITE-328, 7/87; 412 p.

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Trade in Services: Exports and Foreign Revenues—Special Report. Provides a quantitative overview of U.S. international trade in services and discusses policy options for improving Federal Government data on services trade. ITE-316, 9/86; 112 p.

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NTIS order #PB 87-118 204/AS
Free summary available.
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Technology and Structural Unemployment

Technology and Structural Unemployment: Reemploying Displaced Adults. Assesses the reasons and outlook for adult displacement, evaluates the performance of programs to serve displaced adults, and identifies options to improve service. The report also examines trends in international trade and their effects on worker displacement. ITE-250, 2/86; 448 p.

GPO stock #052-003-01017-8 **$15.00**
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Free summary available.
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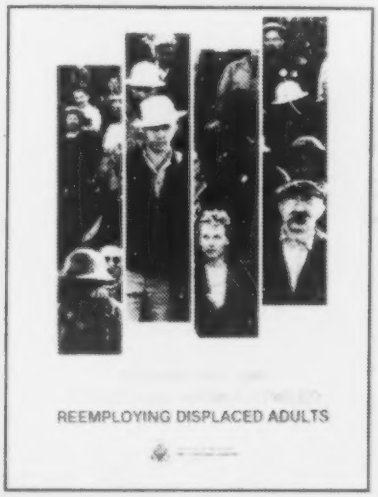
Trade Adjustment Assistance: New Ideas for an Old Program—Special Report. Evaluates the problems and opportunities of the Trade Adjustment Assistance program. Also discusses options for TAA redesign and administration that could make both programs—employment and training assistance for workers who have lost jobs on account of trade, and technical assistance for firms and industries hurt by imports—more effect. ITE-346, 6/87; 80 p.

GPO stock #052-003-01073-9 **$3.25**



REEMPLOYING DISPLACED ADULTS

Plant Closing: Advance Notice and Rapid Responses—Special Report. Explores the benefits and costs of advance notice for plant closings and permanent layoffs and examines the ability of public agencies to provide worker adjustment services rapidly and effectively when employers do give notice. ITE-321, 9/86; 68 p.

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Displaced Homemakers: Programs and Policy—Interim Report. Focuses on problems and performance of Federal support for displaced homemakers. ITE-292, 10/85; 44 p.

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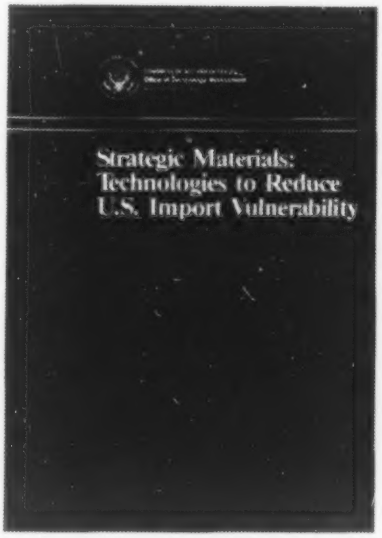

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NTIS order #PB 86-115 367/AS
Free summary available.
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Wood Use: U.S. Competitiveness and Technology. Surveys the contribution of the forest products industry to the U.S. economy; the ability of the industry and the U.S. forest resource to satisfy expected domestic demands for wood; the competitiveness of U.S. forest products in world markets; and the role of technology in stretching the U.S. forest resource and providing products that satisfy domestic needs as well as international markets. ITE-210, 8/83; 204 p.

NTIS order #PB 84-109 925/AS

Volume II: Technical Report. Reviews the status of wood manufacturing technologies and surveys the use of wood products. Also explores technologies and manufacturing processes that can enable the United States to benefit from its vast timber resource. ITE-224.

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An Assessment of Development and Production Potential of Federal Coal Leases (M-150)‡	PB 82-149 378
Technology and Steel Industry Competitiveness (M-122)	PB 80-208 200
Patterns and Trends in Federal Coal Lease Ownership, 1950-80 (TM-M-7)	PB 81-188 484
An Assessment of Oil Shale Technologies (M-118)▲ 4	PB 80-210 115
A History and Analysis of the Federal Prototype Oil Shale Leasing Program Vol. II (M-119)	PB 80-210 123
Benefits of Increased Use of Continuous Casting by the U.S. Steel Industry (TM-ISC-2)	PB 80-104 904
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International Security & Commerce

Seismic Verification of Nuclear Test Ban Treaties. Examines the impact that developments in seismology have had on the United States' capability to seismically verify a treaty with the Soviet Union to either ban or limit the testing of nuclear weapons. ISC-361. In progress.

Technology Transfer to China. Examines the role of imported science and technology in the plans of the People's Republic of China; the technology the United States and other nations can supply; the impacts of policies, both for control and promotion on these transfers; and the security and commercial risks involved. ISC-340, 7/87; 256 p.

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New Technologies for NATO: Implementing Follow-On Forces Attack. Provides a comprehensive appraisal of the technical, military, and political opportunities and risks of using various technologies to implement the follow-on forces attack concept; assesses current and advanced conventional weapons; discusses possible Soviet responses; examines European attitudes; examines issues such as aircraft and missile platforms and target acquisition; and identifies and assesses unsolved technical problems. ISC-309, 6/87; 240 p.

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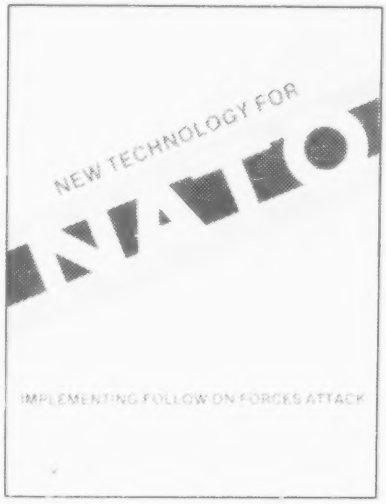

Technology Transfer to the Middle East. Assesses international competition in Middle East technology trade during the past decade, with special attention to transfer of five types of advanced civilian technology; analyzes technology absorption by the recipients in the Islamic Middle East, and the benefits and problems associated with technology transfer for both the recipients and suppliers of technology; includes an analysis of future prospects for technology trade. ISC-173, 9/84; 612 p.

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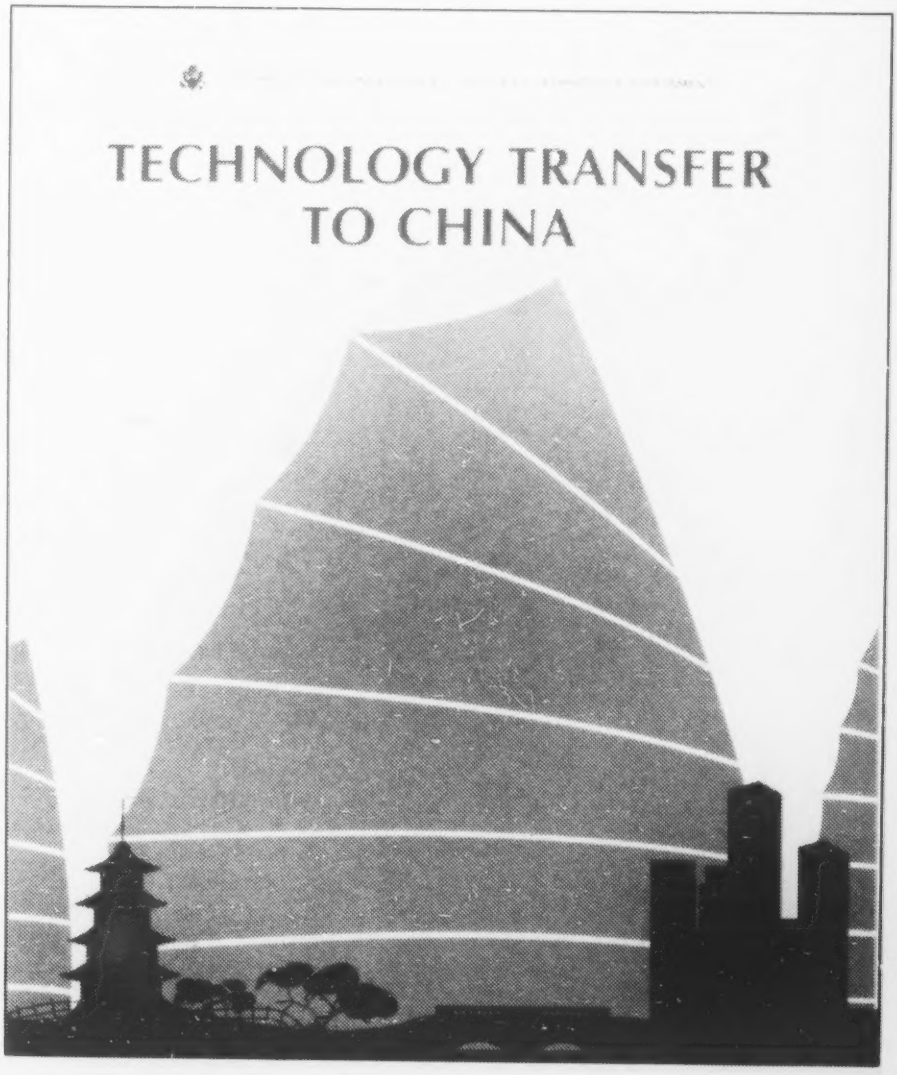

Ballistic Missile Defense Technologies

SDI: Technology, Survivability, and Software. Provides current information with respect to the technologies presently being researched under the strategic defense initiative; examines available information on the prospects for functional survival against preemptive attack of alternative ballistic missile defense system architectures currently being studied under SDI; and analyzes the issues involved in the question of whether it is feasible to develop reliable software to perform the battle management tasks required by such system architectures. ISC-353. In progress.

Ballistic Missile Defense Technology. Examines the potential roles of various levels of BMD deployments in U.S. national defense strategy and the potential implications of BMD for strategic stability and arms control. Also assesses the status of the new technologies applicable to BMD. ISC-254, 9/85; 336 p.

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Anti-Satellite Weapons, Countermeasures, and Arms Control. Examines the range of current and potential anti-satellite weapons and countermeasures and discusses a range of potential arms control regimes. ISC-281, 9/85; 160 p.

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Arms Control in Space—Workshop Proceedings. Summary of findings and proceedings of a workshop held by OTA in Washington, DC, on Jan. 30-31, 1984, to explore and examine possible restrictions on anti-satellite weapons as one aspect of space arms control. BP-ISC-28, 5/84; 68 p.

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Directed Energy Missile Defense in Space—Background Paper. Describes and assesses current concepts for directed energy ballistic missile defense in space. BP-ISC-26, 4/84; 100 p.

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International Cooperation and Competition in Civilian Space Activities. Evaluates the current status of international competition and cooperation in key areas of space technology, in space science, and for educational and scientific exchange; assesses ways in which space technologies and their products could be used as instruments of U.S. foreign policy; and examines military space activities insofar as they affect civilian programs and international commercial and political relations. ISC-239, 7/85; 408 p.

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Remote Sensing and the Private Sector: Issues for Discussion—A Technical Memorandum. This technical memorandum is designed to help determine the appropriate requirements and conditions for private sector ownership of the U.S. land remote-sensing system. TM-ISC-20, 3/84; 144 p.

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UNISPACE '82: A Context for International Cooperation and Competition—A Technical Memorandum. Discusses the issues which arose at this conference, and assesses their significance for "international competition and cooperation in civilian space activities." TM-ISC-26, 3/83; 88 p.

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Commercial Newsgathering From Space—Technical Memorandum. Examines the technical, economic, strategic, and legal issues that would be raised if the news media attempted to use remote sensing satellites for routine newsgathering. TM-ISC-40, 5/87; 64 p.

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International Competitiveness in Electronics. Examines those factors contributing to the international competitiveness of the U.S. electronics industry, emphasizing those factors that could most readily be affected by U.S. Government policy. ISC-200, 11/83; 548 p.

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Technology & Economic Transition

Technology and the American Economic Transition

Technology and the American Economic Transition. Analyzes changes to the American economy by examining products and services, the effects of new technology on society and the economy, and national policy decisions that may be needed to exploit the opportunities technology can offer and protect the country from potential adverse consequences. TET-283. In progress.

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Technology and the Future of the U.S. Construction Industry—Special Report. Analyzes regulatory and policy alternatives that might encourage research and development in the housing industry. 6/86; 156 p.

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New Developments in Biotechnology

Public Perceptions of Biotechnology—Background Paper. Based on an OTA commissioned national survey of the state of public knowledge and opinion concerning issues of genetic engineering and biotechnology. BP-BA-45, 5/87; 136 p.

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Ownership of Human Tissues and Cells—Special Report. Analyzes the economic, legal, and ethical rights of the human sources of tissues and cells, as well as those of the physicians or researchers who obtain and develop these biological materials. Describes the potential of three rapidly moving technologies (tissue and cell culture, cell fusion to produce monoclonal antibodies, and recombinant DNA). BA-337, 3/87; 176 p.

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U.S. Investment in Biotechnology—Special Report. Addresses several broad questions relating to funding research in biotechnology, including areas of research being funded, incentives for investment at the State v. Federal level, collaborative research arrangements, and training. BA-360. In progress.

Environmental Applications of Genetically Altered Organisms—Special Report. Analyzes genetic and ecological issues raised by the deliberate release of genetically engineered organisms into the environment, and describes the present regulatory approach and relevant aspects of public opinion. BA-350. In progress.

Alternatives to Animal Use in Research, Testing, and Education. Examines the current patterns of acquisition and use of animals in the different disciplines of biomedical and behavioral research, toxicity testing, and education. Evaluates the feasibility and cost of developing alternatives to animal use in these areas. Analyzes regulatory requirements in both the United States and selected foreign countries. BA-273, 2/86; 448 p.

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Reproductive Health Hazards in the Workplace. Evaluates the current scientific knowledge base with respect to reproductive hazards in order to outline policy options for the management of reproductive hazards in the workplace. BA-266, 12/85; 436 p.

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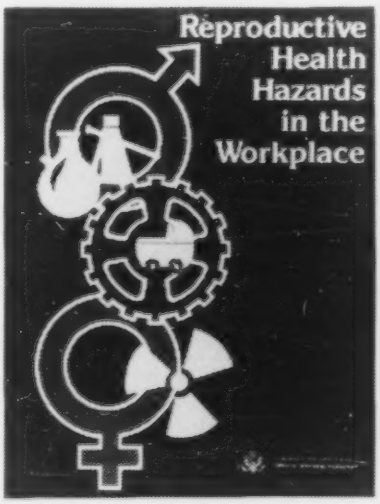

Life-Sustaining Technologies and the Elderly. Reviews and evaluates the appropriate use of life-sustaining technologies, quality of life, patients' rights, surrogate decisionmaking, and the allocation of Federal health care resources. BA-306, 7/87; 472 p.

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Summary: Life-Sustaining Technologies and the Elderly. BA-307, 7/87; 40 p.

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Losing a Million Minds: Confronting the Tragedy of Alzheimer's Disease and Other Dementias. Surveys the status of basic biomedical research and health services research and evaluates the methods for providing long-term care of those who develop dementia. BA-323, 4/87; 548 p.

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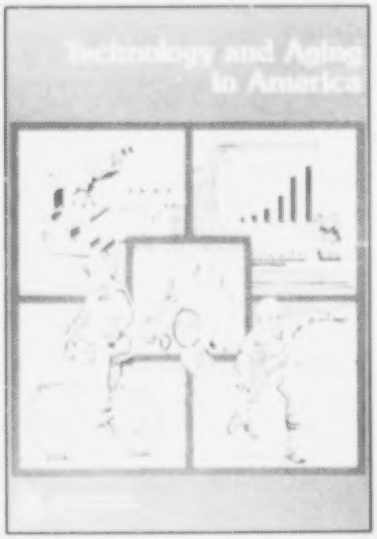

Technology and Aging in America. Assesses the impact of technology in four areas—health and life sciences, employment, housing and public services, and international aspects. BA-264, 6/85; 504 p.

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Hearing Impairment and Elderly People—Background Paper. Focuses on the need for more public information about technologies that compensate for hearing loss and improved service delivery systems that are adapted to the characteristics of the elderly. BP-BA-30, 5/86; 96 p.

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Impacts of Neuroscience—Background Paper. Focuses on the status of basic neuroscience research, and investigates not only the current status and potential medical applications, but also includes broad social and ethical issues that might arise from such research. BP-BA-24, 3/84; 36 p.

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Human Gene Therapy—Background Paper. Assesses the state of the art of technology involved with treating human genetic effects. Describes techniques and the diseases likely to be treated in the near future; discusses possible long-term effects on human genetic diseases and the human gene pool, and sketches some ethical dilemmas. BP-BA-32, 12/84; 116 p.

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Commercial Biotechnology: An International Analysis. Describes the state of the art of biotechnology as applied to industries involved in agriculture; production of pharmaceuticals and chemicals; and environmental applications in such areas as mining, pollution control, oil recovery, and toxic waste treatment. Analyzes factors that will affect commercial development of biotechnology and the U.S. competitive position. BA-218, 1/84; 616 p.

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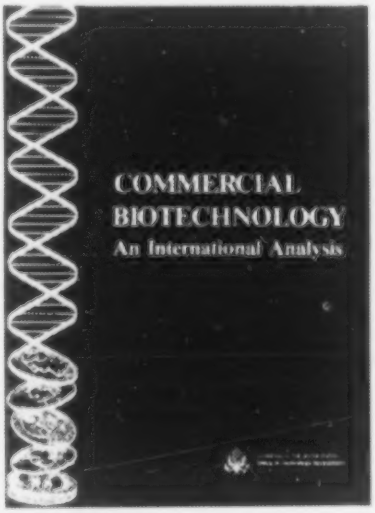

The Role of Genetic Testing in the Prevention of Occupational Disease. Examines questions on the technological state of the art; claimed associations between certain genetic characteristics and increased risk of harm from certain chemicals; protection to workers from discriminatory practices that is provided by existing law; and ethics and economics of genetic testing. BA-194, 4/83; 244 p.

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World Population and Fertility Planning Technologies: The Next 20 Years. Addresses issues of how government policies and programs view planned birth technologies, and how international population assistance has changed world population growth in the last 20 years. Assesses present and prospective birth technologies and factors determining their future development and use. HR-157, 2/82; 244 p.

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Impacts of Applied Genetics: Micro-Organisms, Plants, and Animals. Examines the application of classical and molecular genetic technologies to micro-organisms, plants, and animals. Current developments are especially rapid in the application of genetic technologies to micro-organisms; these are studied in three industries: pharmaceutical, chemical, and food. HR-132, 4/81; 332 p.

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Continuing the Commitment: Agricultural Development in the Sahel—Special Report. Examines the record of assistance to the nations of Sahel in West Africa, explores the lessons learned in the past decade of efforts, and suggests policy implications for more effective U.S. assistance there and elsewhere in Africa. F-308, 8/86; 176 p.

NTIS order #PB 87-117 644/AS

Africa Tomorrow: Issues in Technology, Agriculture, and U.S. Foreign Aid—A Technical Memorandum. Defines various issues in technology development, technology transfer, and technical assistance which could be considered as an effective strategy to assist African countries in enhancing their food production. TM-F-31, 12/84; 148 p.

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Integrated Renewable Resource Management for U.S. Insular Areas. Assesses technologies to review data on freshwater demands, supplies and uses, and water supply enhancement and conservation technologies; assesses agricultural technologies given the availability and quality of water and land supplies; examines aquaculture technologies alone and in combination with agriculture technologies; examines maricultural technologies for their suitability in the insular settings; identifies integrated land capability analysis technologies appropriate to island resource development; and assesses certain opportunities in case studies that include implementation action plans. F-325, 6/87; 452 p.

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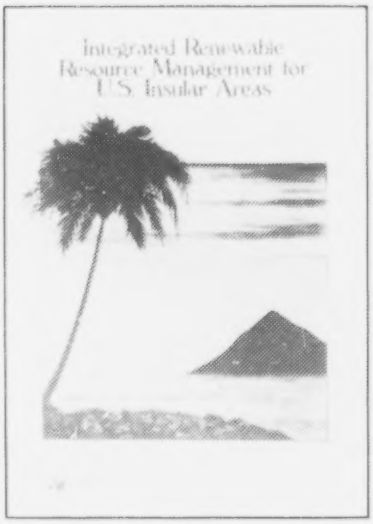

Technologies To Maintain Biological Diversity. Examines the state of existing biological data and proposes ways to improve the use of such data by Federal agencies for the purpose of maintaining biological diversity. F-330, 3/87; 340 p.

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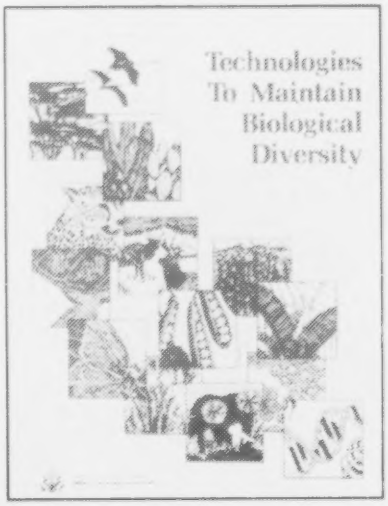

Grassroots Conservation of Biological Diversity in the United States—Background Paper #1. Examines the contributions of grassroots organizations and individuals by illustrating the diversity and range of selected efforts and indicating the present and potential impact of these activities on the overall effort to maintain biological diversity. BP-F-38, 2/86; 72 p.

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Assessing Biological Diversity in the United States: Data Considerations—Background Paper #2. Examines how data can be used in maintaining biological diversity; describes primarily the Federal institutions that collect biological data; provides an overview of existing Federal biological databases; discusses technical aspects of collecting, storing, and retrieving biological data; and suggests ways to improve biological databases so that they can be better used to help maintain diversity of this Nation's plant and animal life. BP-F-39, 3/86; 80 p.

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Technology, Public Policy, and the Changing Structure of American Agriculture. Focuses on future and emerging technologies in other animal, plant, chemical, mechanization, and information areas and their implications for agricultural structure. Also explores linkages between policy and structure for a clearer understanding of the factors that influence the evolution of the agricultural sector. F-285, 3/86; 380 p.

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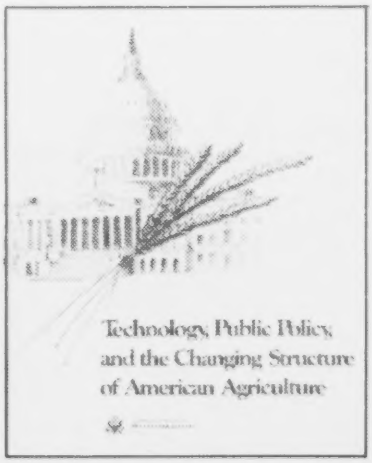

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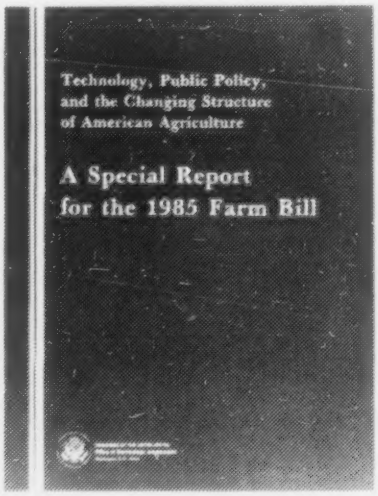

Technology, Public Policy, and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill. Special report focusing on three main policy areas of the reauthorization of the Agriculture and Food Act of 1981: commodity, credit, and research and extension. F-272, 3/85; 100 p.

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Innovative Biological Technologies for Lesser Developed Countries—Workshop Proceedings. Workshop proceedings held in November 1980. Discusses the U.S. Agency for International Development and its role in using, promoting, and developing innovative biological technologies to help lesser developed countries enhance the productivity of their soils, reduce their need for costly chemical fertilizers, and increase food supplies. BP-F-29, 7/85; 252 p.

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Technologies To Benefit Agriculture and Wildlife—Workshop Proceedings. Workshop proceedings presenting a broad range of papers on specific technologies that could benefit both agricultural production and wildlife habitat requirements on private lands. Also describes some constraints and opportunities to integrate agriculture and wildlife concerns and discusses policy opportunities for improved agriculture and wildlife integration. BP-F-34, 5/85; 148 p.

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Technology, Renewable Resources, and American Crafts—Background Paper. Summarizes technology's effects on crafts (some of which are folk and fine art) that use renewable resources as raw materials. BP-F-27, 4/84, 60 p.

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Technologies To Sustain Tropical Forest Resources. Examines the importance of tropical forests to the United States and the world, reviews the rates and causes of deforestation and forest degradation, and assesses how U.S. technology could help alleviate this resource problem. F-214, 3/84; 352 p.

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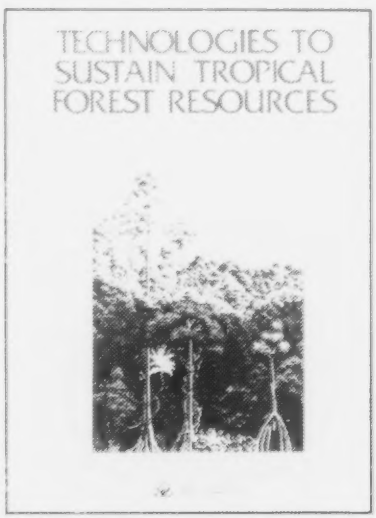

Sustaining Tropical Forest Resources: Reforestation of Degraded Lands—Background Paper #1. Describes the state of the art in the use of forestry technologies to restore the productivity of tropical lands that have been degraded because of human activity. BP-F-18, 5/83; 56 p.

NTIS order #PB 84-104 041/AS

Sustaining Tropical Forest Resources: U.S. and International Institutions—Background Paper #2. Describes Government, academic, and private sector institutions in the United States that are developing or implementing technologies to sustain tropical forest resources. BP-F-19, 5/83; 68 p.

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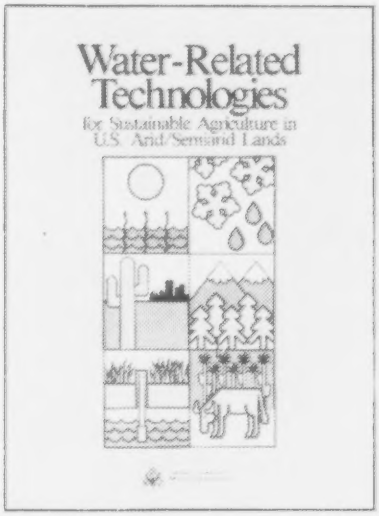

Water-Related Technologies for Sustainable Agriculture in U.S. Arid/Semiarid Lands. Assesses existing and emerging water-related technologies for their ability to support long-term productivity of arid/semiarid agricultural plants and animals in the context of institutional factors, water supply/use relationships, and the characteristics of the renewable natural resource base on which agriculture depends. F-212, 10/83; 412 p.

NTIS order #PB 84-172 667/AS
Free summary available.

Water-Related Technologies for Sustainable Agriculture in Arid/Semiarid Lands: Selected Foreign Experience—Background Paper. Highlights examples of water-related technologies that have been successfully applied in arid and semiarid foreign countries—integrated irrigation management, intensive water use planning, cooperative plant breeding, native game ranching, and guayule production. BP-F-20, 5/83; 84 p.

NTIS order #PB 84-102 912/AS

Plants: The Potentials for Extracting Protein, Medicines, and Other Useful Chemicals—Workshop Proceedings. Identifies technological opportunities and constraints for commercially developing protein, pharmaceuticals, chemicals, and other associated extracts from plants. BP-F-23, 9/83; 252 p.

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Health

Healthy Children: Investing in the Future. Examines current evidence on the effectiveness and costs of health care technologies in promoting and maintaining children's health; examines patterns of availability of these technologies and barriers to their appropriate use; and examines the role of Federal policies, including Medicaid, Maternal and Child Health, and the Women, Infants and Children Program in providing access to preventive and therapeutic technologies. H-344. In progress.

Technology-Dependent Children: Hospital v. Home Care—Technical Memorandum. Examines problems of health care financing encountered by technology-dependent children. TM-H-38, 5/87; 116 p.

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Case Study #38 Neonatal Intensive Care for Low Birthweight Infants: Costs and Effectiveness. Analyzes evidence on the effectiveness of neonatal intensive care for the survival and normal developmental outcome of extremely premature babies. HCS-38. In progress.

Identifying and Regulating Carcinogens—Background Paper. Comparison of Federal carcinogen policies on a number of technical and scientific points concerning the conduct of animal studies, the procedures used to evaluate the results of the studies, and the ultimate regulatory use of the data resulting from the studies. BP-H-42, 11/87; 260 p.

GPO stock #052-003-01080-1 **$11.00**

Children's Mental Health: Problems and Services—Background Paper. Examines mental health services currently available to children; the effectiveness of the various mental health treatments and the appropriate mix of mental health services; the roles third-party coverage and Federal and State Governments play in the provision of mental health services; and identifies areas for further research. BP-H-33, 12/86; 192 p.

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Case Study #37: Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives: A Policy Analysis. Examines the costs, effectiveness, and payment status of nurse practitioners, certified nurse-midwives, nurse clinicians, physician assistants, and Medex in the United States. HCS-37, 12/86; 96 p.

NTIS order #PB 87-177 465/AS

Technologies for Detecting Heritable Mutations in Human Beings. Examines the scientific basis of new technologies, their current status, and potential improvement for predicting the mutagenic risk of chemicals and physical agents. H-298, 9/86; 156 p.

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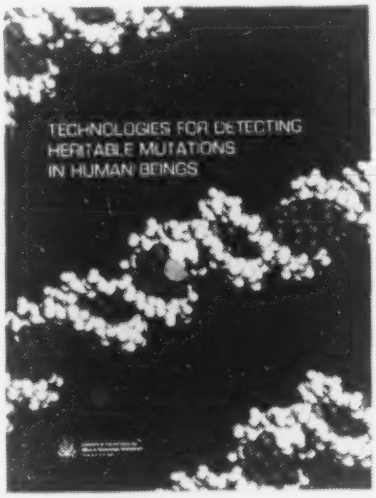

Indian Health Care. Analyzes the quality and adequacy of data on Indian health status; identifies the types and distribution of technologies and services available through the Indian Health Service and other providers; determines the desirable range and methods of delivery of health-related technologies and services; and develops policy options to improve the selection, provision, financing, and delivery of technologies and services to Indian populations. H-290, 4/86; 384 p.

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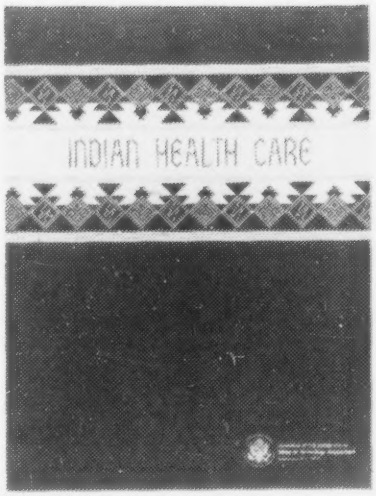

Payment for Physician Services: Strategies for Medicare. Examines alternative methods for paying for physician services and the effect of physician payment methods on the use of medical technology. H-294, 2/86; 288 p.

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Case Study #36: Effects of Federal Policies on Extracorporeal Shock Wave Lithotripsy. HCS-36, 5/86; 120 p.

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Medicare's Prospective Payment System: Strategies for Evaluating Cost, Quality, and Medical Technology. Examines Medicare's hospital payment system—prospective payment based on diagnosis-related groups (DRGs), and the impact of the development and use of medical technology. The assessment identifies the range of possible effects related to medical technology and its use; evaluation measures; ongoing or planned monitoring and evaluation activities; shortcomings and gaps in these activities; and develops an overall design for evaluation, including timing, methodology, priorities, and the role of current or planned efforts. H-262, 10/85; 248 p.

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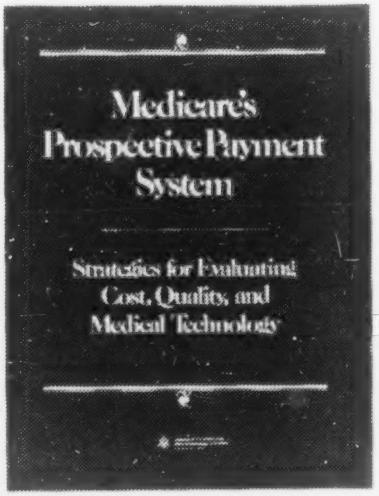

Status of Biomedical Research and Related Technology for Tropical Diseases. Examines the status of biomedical and epidemiologic research and related technology development in the area of tropical diseases, identifies areas of promise for continued or increased funding, and presents a series of options for making decisions about research funding, technology development and testing, and other policies regarding tropical diseases. H-258, 9/85; 296 p.

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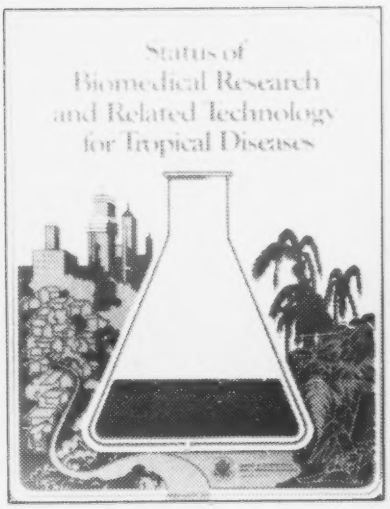

Quality and Relevance of Research and Related Activities at the Gorgas Memorial Laboratory—A Technical Memorandum. Reviews the quality and relevance of activities at the Gorgas Memorial Laboratory (GML), based on Gorgas's publishing record, an OTA commissioned survey of GML's scientific reputation, a critical review of recent articles and current manuscripts, a comparison of GML's areas of effort with health problems in tropical America and with scientific opportunity, a review of past scientific evaluations of GML, and an examination of its record of competing for grants and contracts. TM-H-18, 8/83; 96 p.

NTIS order #PB 87-142 238/AS

Preventing Illness and Injury in the Workplace. Develops information about research and development, diffusion, application, and evaluation of workplace control technologies. Engineering controls, worker education programs, personal protective devices, and interrelationships between them and their role in worker protection are evaluated. H-256, 4/85; 436 p.

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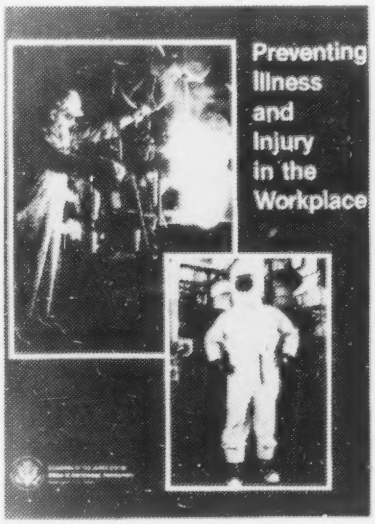

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Federal Response to AIDS

Cost-Effectiveness of Educational Programs to Prevent AIDS—Background Paper. Analyzes the cost-effectiveness of educational efforts directed at the spread of infection with the AIDS virus. In progress.

Do Insects Transmit AIDS?—Staff Paper. Examines whether blood-sucking insects, such as biting flies and mosquitoes, transmit the AIDS virus from infected to uninfected persons. 9/87; 48 p.

GPO stock #052-003-01085-2 **$2.25**

Costs of AIDS and Other HIV Infections: Review of the Estimates —Staff Paper. Reviews medical costs related to treating patients with AIDS. 5/87. Available from OTA Health Program.

Review of the Public Health Services' Response to AIDS—Technical Memorandum. Reviews the activities of the Public Health Service response to AIDS and evaluates the planning, resources, and staffing of PHS's efforts to control AIDS. TM-H-24, 2/85; 168 p.

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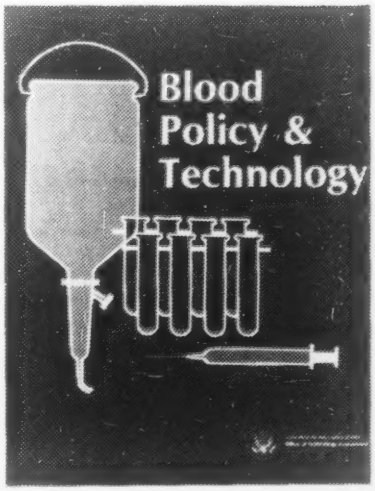

Blood Policy and Technology. Assesses technologies affecting the availability, users, and risks of blood. Areas assessed are: blood collection, processing, storage, and distribution; identification, isolation, production, and use of blood components; blood substitutes; and identification and prevention of blood-transmitted diseases and other risks. H-260, 1/85; 248 p.

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Federal Policies and the Medical Devices Industry. Develops information about the nature of firms that manufacture medical technologies, conducts case studies of selected medical devices, and examines present and proposed Federal policies that influence the medical devices industry and the cost and effectiveness of medical devices. H-229, 10/84; 260 p.

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Case Study #27: Nuclear Magnetic Resonance Imaging Technology: A Clinical, Industrial, and Policy Analysis. HCS-27, 9/84; 156 p.

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Case Study #29: Boston Elbow. HCS-29, 11/84; 44 p.

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Case Study #31: Contact Lenses. HCS-31, 12/84; 76 p.

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Case Study #32: Hemodialysis Equipment. HCS-32, 12/84; 80 p.

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Case Study #33: Technologies for Managing Urinary Incontinence. HCS-33, 7/85; 76 p.

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Procurement and Evaluation of Medical Devices by the Veterans Administration—A Technical Memorandum. TM-H-16, 2/85; 116 p.

GPO stock #052-003-00988-9 **$4.25**
NTIS order #PB 87-117 677/AS

Abstracts of Case Studies in the Health Technology Case Study Series. Contains a description of the OTA "Health Technology Case Study Series" and abstracts of each of the case studies published. P-225, 12/86; 64 p.

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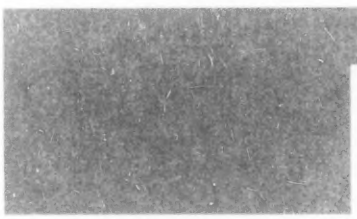

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Medical Technology and Costs of the Medicare Program

Medical Technology and Costs of the Medicare Program. Analyzes a broad range of mechanisms to reduce or limit Medicare costs related to medical technology. Includes case studies, technical memoranda, and background papers of particular medical technologies. H-227, 7/84; 232 p.

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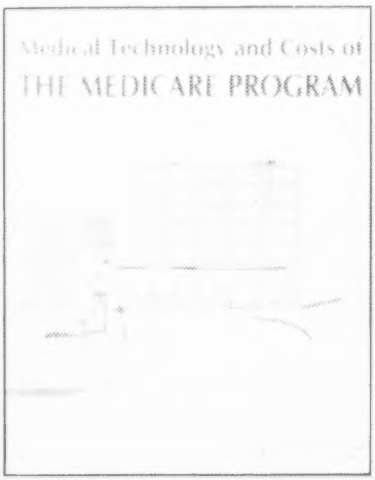

Case Study #22: The Effectiveness and Costs of Alcoholism Treatment. HCS-22, 3/83; 100 p.

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Case Study #23: The Safety, Efficacy, and Cost Effectiveness of Therapeutic Apheresis. HCS-23, 7/83; 168 p.

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Diagnosis Related Groups (DRGs) and the Medicare Program: Implications for Medical Technology—A Technical Memorandum. TM-H-17, 7/83; 84 p.

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Case Study #34: The Cost Effectiveness of Digital Subtraction Angiography in the Diagnosis of Cerebrovascular Disease. HCS-34, 5/85; 68 p.

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Case Study #35: Efficacy, Safety, and Cost Effectiveness of Continuous Ambulatory Peritoneal Dialysis. HCS-35, 9/85; 76 p.

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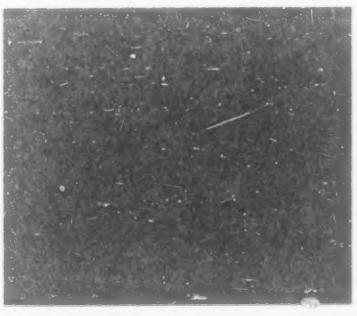

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Scientific Validity of Polygraph Testing: A Research Review and Evaluation—Technical Memorandum. Presents the results of the OTA review and assessment of the scientific evidence on the validity of polygraph testing. TM-H-15, 11/83; 140 p.

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Strategies for Medical Technology Assessment. Focuses on the flow of information that is central to an effective assessment system. Critiques the current assessment system with respect to identifying medical technologies for assessment; developing and synthesizing information about such technologies' health, economic, and social effects; and disseminating this information to health care decisionmakers. H-181, 9/82; 228 p.

NTIS order #PB 83-113 274

Technology and Handicapped People. Examines the specific factors that affect the research and development, evaluation, diffusion and marketing, delivery, use, and financing of technologies directly related to disabled people. H-179, 5/82; 216 p.

NTIS order #PB 83-172 056
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Assessment of Technologies for Determining Cancer Risks From the Environment. Examines four major issues: estimates of the percentage of cancer due to environmental exposure, technologies used to test for carcinogenicity, methods used for extrapolating data from animals to humans, and regulatory pathways for controlling carcinogens. H-138, 6/81; 244 p.

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The Implications of Cost-Effectiveness Analysis of Medical Technology. Analyzes the feasibility, implications, and usefulness of cost-effectiveness analysis (CEA) and cost-benefit analysis (CBA) in health care decisionmaking, including the current and potential use of CEA/CBA or related techniques in six health care activities: reimbursement programs, Professional Standards Review Organizations, health planning, market approval for drugs and medical devices, R&D programs, and health maintenance organizations. H-126, 8/80; 220 p.

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Working Paper: Diagnosis Related Groups (DRGs) and the Medicare Program: Using Diagnosis Related Groups in Hospital Payment—The New Jersey Experience	PB 84-193 606/AS
MEDLARS and Health Information Policy—A Technical Memorandum (TM-H-11)	PB 83-168 658
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Technology and Learning Disabilities (HCS-25)	PB 84-184 043/AS
Assistive Devices for Severe Speech Impairments (HCS-26)	PB 84-175 371/AS
Mandatory Passive Restraint Systems in Automobiles: Issues and Evidence (BP-H-15)	PB 83-159 822
Selected Telecommunications Devices for Hearing-Impaired Persons (BP-H-16)	PB 83-169 292
Cost-Effectiveness Analysis of Influenza Vaccine (H-152)	PB 82-178 492
Update of Federal Activities Regarding the Use of Pneumococcal Vaccine (TM-H-23)	PB 85-128 155/AS
Compensation for Vaccine-Related Injuries (TM-H-6)	PB 81-163 909
Forecasts of Physician Supply and Requirements (H-113)	PB 80-181 670
Computer Technology in Medical Education and Assessment (BP-H-1)	PB 80-102 528
The Impact of Randomized Clinical Trials on Health Policy and Medical Practice (BP-H-22)	PB 84-114 560
The Information Context of Premanufacture Notices (BP-H-17)	PB 83-241 059
Postmarketing Surveillance of Prescription Drugs (H-189)	PB 83-173 625
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Communication & Information Technologies

The Electronic Supervisor: New Technology, New Tensions. Examines new and prospective capabilities of communication technology; assesses their impact on privacy and security; and analyzes how the combination of technical, administrative, and legal safeguards can cope with privacy and security implications. CIT-333, 9/87; 150 p.

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Defending Secrets, Sharing Data: New Locks and Keys for Electronic Information. Analyzes the need for information security; examines whether safeguards designed for use by defense and intelligence agencies can meet the needs of commercial users without jeopardizing U.S. intelligence objectives. The report also examines broader issues of the appropriate role of defense and intelligence agencies in civilian matters, and how openness and free market can coexist with secret operations and controls on sensitive information. CIT-310, 10/87; 200 p.

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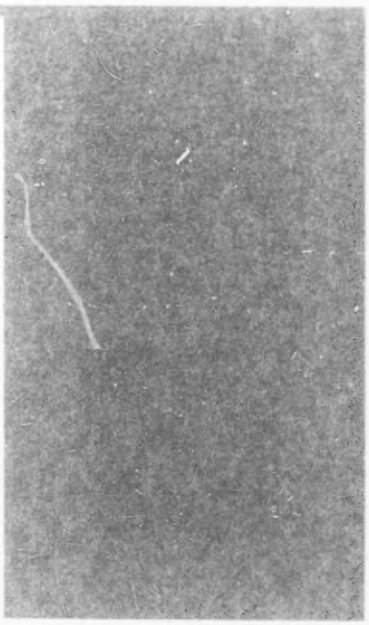

Science, Technology, and the Constitution in The Information Age

Science, Technology, and the Constitution—Background Paper. Discusses the effects science and technology has had in shaping American society and our way of life. BP-CIT-43, 9/87; 32 p.

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Science, Technology, and the First Amendment. This special report will be done in two parts. Part I considers the constitutional status of science—is there a "right to do research," or should some areas of experimentation be prohibited or regulated? It will also discuss how freedom of speech and press apply to scientific communications, and the extent to which these fundamental freedoms can be and are restricted in the interest of national security and export controls. Part II looks more specifically at "new technologies for the press," that is, for news-gathering, news-editing, and news-delivery, and their implications for the meaning of freedom of the press. CIT-369. In progress.

Science, Technology, and Constitutional Governance. This report will look at the implications of new communications and information technologies for basic principles of American government: representation, separation of powers, Federalism, and national sovereignty. CIT-370. In progress.

Technology and the Bill of Rights. This report examines some new technological capabilities that have the potential for enlarging the area of personal choice, or creating new tensions between individual rights and the general welfare. CIT-371. In progress.

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Intellectual Property Rights in an Age of Electronics and Information. Identifies and analyzes trends in the development of the new information technologies to determine those areas where there might be gaps in the laws and practices of intellectual property. CIT-302, 4/86; 300 p.

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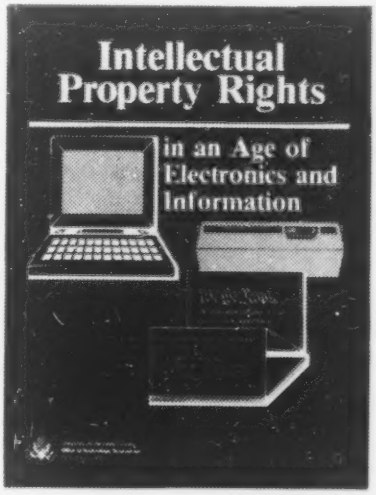

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Federal Government Information Technology

Federal Government Information Technology: The Social Security Administration and Information Technology—Special Report. Examines the objectives and technical strategies embodied in the Systems Modernization Plan and the progress that the Social Security Administration has made toward its implementation. The report calls attention to some general problems faced by both SSA and other Federal agencies that are increasingly dependent on communications and information technology in carrying out their missions. CIT-311, 9/86; 160 p.

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Federal Government Information Technology: Electronic Record Systems and Individual Privacy. Addresses four major areas: 1) technological developments relevant to government record systems; 2) current and prospective Federal agency use of electronic record systems; 3) the interaction of technology and public law relevant to protecting privacy; and 4) possible actions. CIT-296, 6/86; 160 p.

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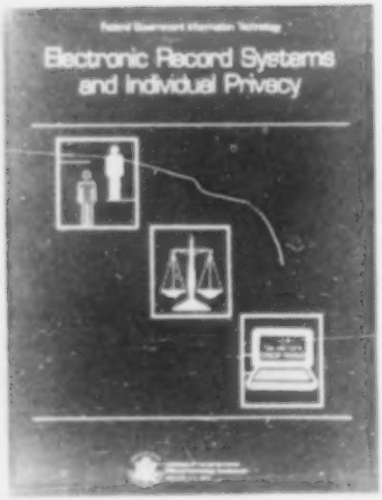

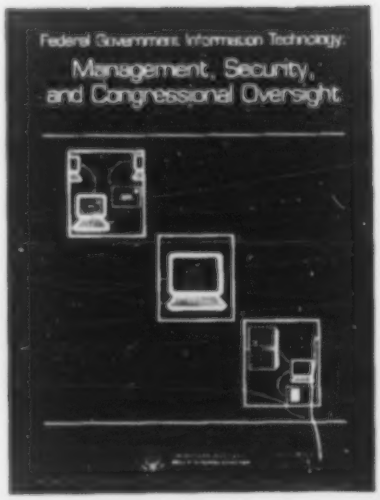

Federal Government Information Technology: Management, Security, and Congressional Oversight. Focuses on the management, use, and congressional oversight of information technology in the Federal Government. CIT-297, 2/86; 192 p.

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Federal Government Information Technology: Electronic Surveillance and Civil Liberties. Focuses on technological developments in the basic communication and information infrastructure of the United States that present new or changed opportunities for and vulnerabilities to electronic surveillance. CIT-293, 10/85; 80 p.

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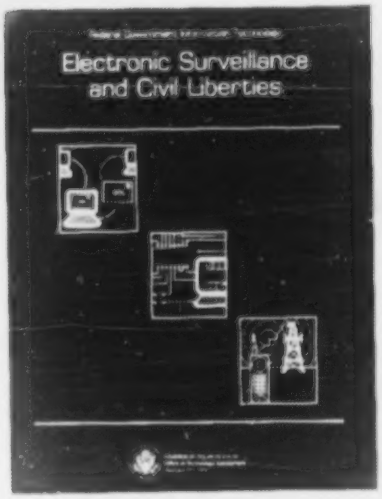

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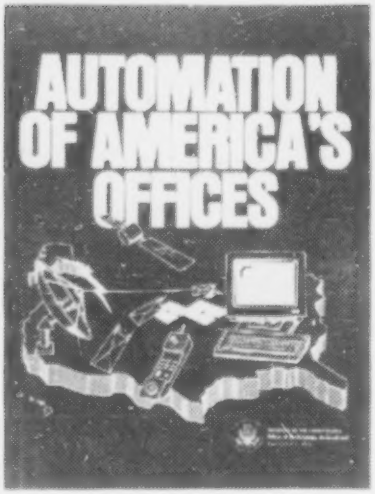

Automation of America's Offices. Analyzes plausible trends in office automation over the next decade; examines the social and economic impacts of its use; and examines the effects of Federal policy options on the further development and use of office technologies in the public and private sectors. OTT-287, 12/85, 366 p.

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Information Technology R&D: Critical Trends and Issues. Analyzes Federal policy, both directly by trends in R&D support and indirectly by tax, antitrust, regulatory, copyright, and education policy. CIT-268, 2/85; 352 p.

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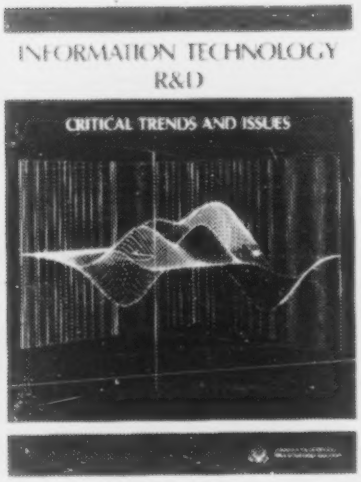

Microelectronics Research and Development—Background Paper. Describes the current state of microelectronics research and development by examining the technologies emerging from R&D efforts and the range of institutional support for R&D. BP-CIT-40, 3/86; 44 p.

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Scientific Use of Supercomputers—Background Paper. Assesses the progress in Federal efforts to make supercomputers available to the U.S. scientific research community, and examines the issues of impacts on technology development, facility management, software development, and networking. BP-CIT-31, 3/86; 36 p.

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Effects of Information Technology on Financial Services Systems. Examines technologies that are likely to be employed in delivering financial services in the future; the nature of the services that may be provided; and alternative structures of the financial services industry that may emerge as a result of applying new and existing technologies, particularly as they interact with Federal policy. CIT-202, 9/84; 284 p.

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Computerized Manufacturing Automation: Employment, Education, and the Workplace. Assesses trends and the state of R&D in computerized manufacturing technologies over this decade; the development of industries producing computerized manufacturing equipment, software, and services; the potential utility of computerized automation for various categories of manufacturing industries that might use it; impacts on employment; implications for education and training; and analyzes the impacts of

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Marine Minerals: Exploring Our New Ocean Frontier. Examines current knowledge about the hard mineral resources within the EEZ, explores the economic and security potential of seabed resources, assesses the technologies available to explore for and mine those resources, and identifies issues and presents options for dealing with these issues. O-342, 7/87; 464 p.

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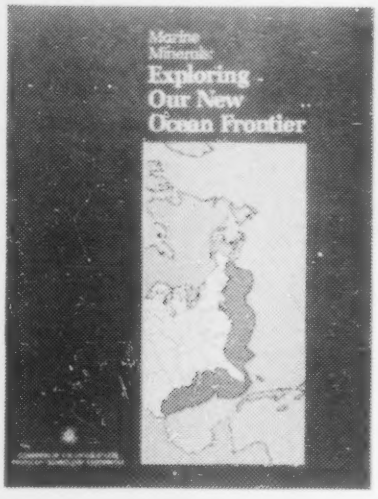

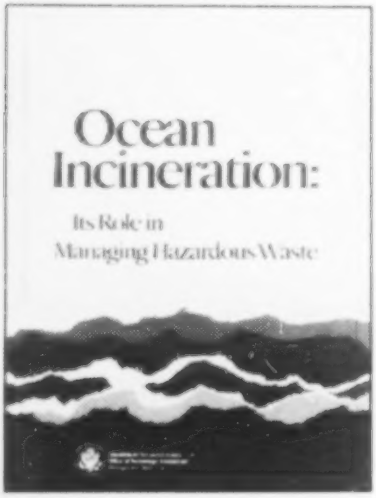

Ocean Incineration: Its Role in Managing Hazardous Waste. The assessment considers the adequacy of regulations, risks to human health and the marine environment, existing and emerging alternatives, the capabilities and limitations of ocean incineration in managing hazardous wastes, and how its use might affect efforts to develop superior waste treatment and reduction practices. O-313, 8/86; 236 p.

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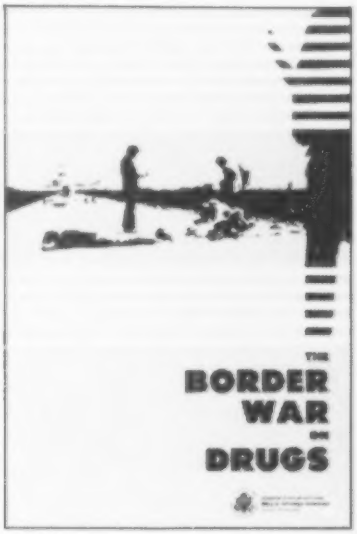

Marine Applications for Fuel Cell Technology—A Technical Memorandum. Assesses the state of the art of fuel cell technologies, and identifies and evaluates potential marine uses for fuel cells. TM-O-37, 2/86; 40 p.

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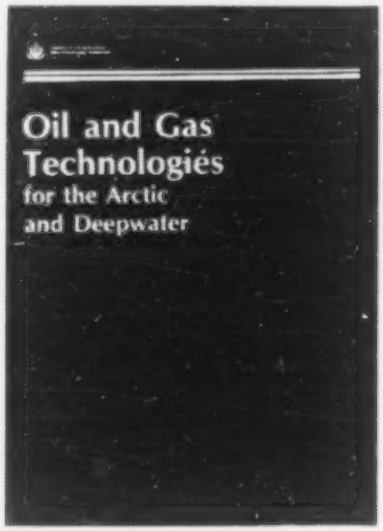

Oil and Gas Technologies for the Arctic and Deepwater. Explores the range of technologies required for exploration and development of offshore energy resources and assesses associated economic factors and financial risks. Also evaluates the environmental factors related to energy activities in frontier regions and considers important government regulatory and service programs. O-270, 5/85; 236 p.

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Volume II: Protecting the Nation's Groundwater From Contamination. Presents in detail the information and data on which the analyses and conclusions of Vol. I are based. The report is organized into eight appendixes covering health impacts and sources of groundwater contamination; the State framework for protecting groundwater quality based on results from a State survey; technical and nontechnical issues related to the application of corrective action alternatives; and definitions of hydrogeologic terms. O-276, 10/84; 264 p.

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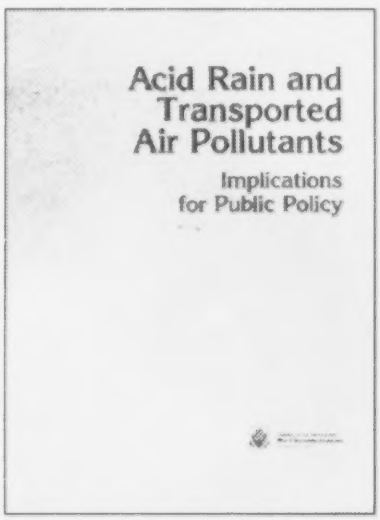

Acid Rain and Transported Air Pollutants: Implications for Public Policy. Characterizes the potential benefits of acting now to abate long-range transport air pollution and the potential costs of action that may be premature. O-204, 6/84; 324 p.

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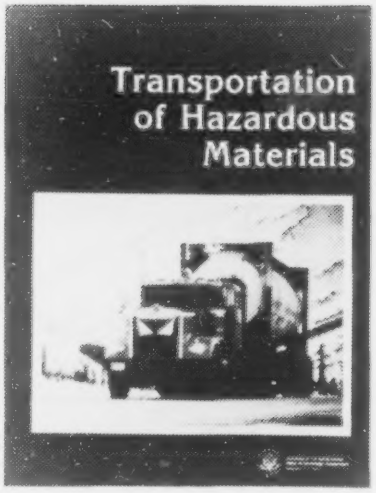

Transportation of Hazardous Materials: State and Local Activities—Special Report. Identifies issues, concerns, and needs of States and localities regarding the transportation of hazardous materials. States and localities bear responsibility for responding to emergencies involving these materials in most instances. SET-301, 2/86; 92 p.

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The Regulatory Environment for Science—A Technical Memorandum. Traces changes in the historical treatment of research in the United States, compares effects of direct and indirect regulation on various types of research institutions, and identifies possible new areas of concern for Congress. TM-SET-34, 2/86; 156 p.

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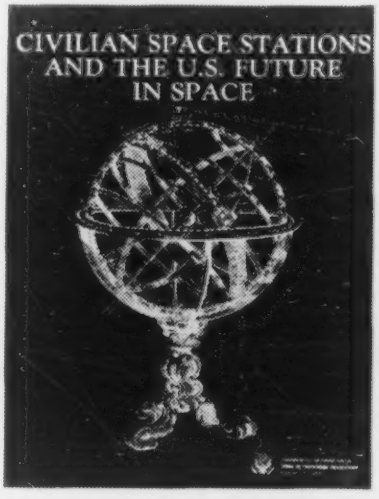

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Salyut: Soviet Steps Toward Permanent Human Presence in Space —A Technical Memorandum. Examines the range of capabilities that the Soviets have achieved in using men and women aboard the Salyut stations and the directions their programs may take in the future. TM-STI-14, 12/83; 80 p.

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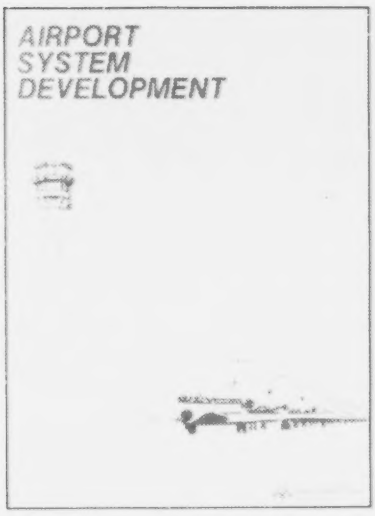

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Annual Report to the Congress, Fiscal Year 1986. The annual report presents detailed assessments of the work accomplished by OTA in the preceding year, including a review of management and administrative functions. Of particular importance is a thorough report on the various studies produced by OTA and specific indications of their implications for the technological community. Indications of work in progress are provided and remarks from the OTA Board are included to indicate the extent of congressional oversight. A-327, 1/87.

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